

Agenda
Meeting in power lab
at 2:30 November 12, 2020

- Ulrich
 - Connecting optic perf boards
 - Checking the voltage out of the transformer and rectifier worked out after a voltage divider at 15V
 - To do: Testing power for optics and DCDC converter
- Taylor
 - ADC seems to have random offset
 - Serial interface seems to be too slow
 - Specing out parallel ADC module, may be one from TI
 - Hoping to find better ways to get off board
- Keegan
 - PCB questions and changes in design
- Questions about detail needed on poster
- Pictures for poster

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:			
Issues:	None		
Risks:	None		

Agenda
Thursday October 29th, 2020

Previous Action Items-

- Create Gerbers
- Simulink install
- Adding closed loop control
- Make purchases

Future Action Items

- Mason T.
 - Embedded code won't be as turnkey without \$3000 plugin
 - Getting model put together and implement closed loop control w/ ADC
 - Working out test plan for all individual components
- Mason U.
 - Mounting on stand
- Keegan
 - Finishing up PCB and reworking to use parts on hand
- Planning on finishing deliverables soon

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:			
Issues:	None		
Risks:	None		

Agenda

Thursday 10/22/2020 at 2:30

Previous Action Items-

- Create Gerbers
- Simulink install
- Adding closed loop control
- Make purchases

Future Action Items

- Mason T.
 - Get Simulink model running
 - Adding closed loop control
- Mason U.
 - Package came in
 - Laying out power supply
 - Meeting to solder optics, rectifier, DC-DC converter w/ Keegan at 12:30
 - Which stand can we use to mount components on?
 - Electrolytic vs ceramic?
 - Ceramic are not quite going to cut it
- Keegan
 - Soldering

- Building
- Wires to connect board to board?
 - Braiding individual cables vs ribbon vs grounded wrapping

Status report

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Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:			
Issues:	None		
Risks:	None		

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Quality			X
Team Dynamics			X

Client Reactions			X
Next milestones:			
Issues:	None		
Risks:	None		

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Quality			X
Team Dynamics			X
Client Reactions			X
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Issues:	None		
Risks:	None		

Agenda

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Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:			
Issues:	None		
Risks:	None		

Agenda

Thursday October 15, 2:30

Previous Action Items-

- Create Gerbers
- Simulink install
- Adding closed loop control
- Make purchases

Future Action Items

- Mason T.
 - Get Simulink model running
 - Adding closed loop control
- Mason U.
 - Package came in
 - Laying out power supply
 - Meeting to solder optics, rectifier, DC-DC converter w/ Keegan at 12:30
 - Which stand can we use to mount components on?
- Keegan
 - Soldering
 - Building

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:			
Issues:	None		

Agenda

Thursday October 1st at 2:30

Previous Action Items-

- Mason U.
 - DC-DC converter/ power sequence planning
 - Mounting Gate drive and snubber boards
 - Ordering missing components with DC-DC converters possibly
 - Talked to Mike
 - Speccing additional ADC's
 - Cutting an ADC
- Mason T.
 - Matlab setup
 - Small scale
 - Running small scale at 60 hz instead of 500
 - Speccing additional ADC's
- Keegan
 - Testing sensors in power lab has failed

- Everything worked well
- More soldering to continue

Future Action Items

- Mason U.
 - Spec'ing more ADC's
 - Working with Keegan on developing Gerbers for Mike
- Mason T.
 - Small scale
 - Adding closed loop control
 - Simulink install
- Keegan
 - Create gerbers for mike

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:			
Issues:	None		
Risks:	None		

Agenda

at 1:30 on 9-24-2020

Previous Action Items-

- Mason U.
 - Spec'ed out quite a few DC-DC and ran them by Law
 - Added models of DC-DC converters
 - Power sequence planning
- Mason T.
 - getting gate drive circuits to switch mosfets
 - Simulink imbedded coder
- Keegan
 - How to turn on Power Wall
 - Building circuits
 - Check on PCB production
- Soldering occurred

- 40 ns delay through soldered optics
- More building to commence

Future Action Items

- Mason U.
 - DC-DC converter/ power sequence planning
 - Mounting Gate drive and snubber boards
 - Ordering missing components with DC-DC converters possibly
- Mason T.
 - Matlab setup from Brook has failed so far
 - Running small scale at 60 hz instead of 500
 - Speccing additional ADC's
- Keegan
 - Testing sensors in power lab has failed
 - What went wrong?
 - More soldering to continue

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Design Final Draft, DC-DC converters, sensors, Field oriented control algorithm, FOC + SVM		
Issues:	None		
Risks:	None		

Agenda 9/17/2020

2:30 PM

Previous Action Items-

- Mason U
 - DC-DC converters
 - Design Final draft
- Mason T.

- Small scale
 - Simulink imbedded coder
- Keegan
 - Inspecting sensors with Mason T.
- Soldering session

Future Action Items

- Mason U.
 - Specced out quite a few DC-DC and ran them by Law
 - Added models of DC-DC converters
 - How to mount snubbers directly to IGBTs?
- Mason T.
 - getting gate drive circuits to switch mosfets
 - Simulink imbedded coder
- Keegan
 - How to turn on Power Wall
 - Building circuits
 - Check on PCB production
- Soldering occurred
 - 40 ns delay through soldered optics
 - More building to commence

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Design Final Draft, DC-DC converters, sensors, Field oriented control algorithm, FOC + SVM		
Issues:	None		
Risks:	None		

Agenda 9/10/2020

Previous Action Items-

- Design Review

Future Action Items

- Mason U
 - DC-DC converter
 - Battery storage for gate-driver source
 - Design Final draft
 - Is BMS necessary?
 - Rail Value exactly?
- Mason T.
 - Small scale
 - Simulink imbedded coder
 - Only 5 ADC's: How many sensors?
- Keegan
 - Inspecting sensors with Mason T.
 - Controller Design?
- Soldering session

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Battery storage, DC-DC converter, optic perf boards		
Issues:	None		
Risks:	None		

Agenda

Setting up the Semester

- Does this time work weekly?
- Planning for the worst
- Advice for action items on Gantt Chart

Future Action Items

- Concept Review planning
- Updating Gantt Chart

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Concept Review		
Issues:	None		
Risks:	None		

Agenda for the team meeting scheduled on Thursday May 7th, 2020, @ 10:30 AM.

Completed

- Keegan:
 - Found optical links
 - Approximate 200 dollars
 - 6 trans/rec and cables
- Mason T.:
 - Converted simulations over to DQ
 - Able to control magnitude and phase
 - Working on implementing it into C
 - Test planning for small scale test with breadboard and small RL load
- Mason U.:
 - Further analyze single leg with snubbers
 - Working on set up for six step waveform with ideal switches

Summer Plans and Semester Wrap up

Status report

Status Items to Report	R	Y	G
Schedule		X	
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Simulations, fiberoptics,		

Issues:	Falling a bit behind
Risks:	N/A

Previous Action Items-

- Develop control code
- Continue simulations of Gate Drivers/IGBTs H-bridge & Thermals
- Continue simulation of Space Vector

Future Action Items

- Develop software test plan
- SPICE simulations of Six Step inverter
- Improved SV simulation (current control model with PI controller)

Discussion Items

- Simulation of Six Step inverter
- MatLab+Simulink & STM32

Status report

Status Items to Report	R	Y	G
Schedule		X	
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Six Step Simulation, Current Control SVM simulation		
Issues:	None		
Risks:	None		

Previous Action Items-

- Develop Control Code
- Continue Simulations of Gate Drivers/IGBTs
- Delegation of Project Work

Future Action Items

- Develop Control Code
- Continue Simulations of Gate Drivers/IGBTs H-bridge & Thermals
- Continue Simulation of Space Vector

Discussion Items

- Working in Isolation

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	H-bridge simulation, PWM Simulation		
Issues:	None		
Risks:	None		

Previous Action Items-

- Check on Component Status
- Test Plan for Hardware/Software
- Concept Review
- Research Items from Concept Review

Future Action Items

- Develop Control Code
- Continue Simulations of Gate Drivers/IGBTs
- Continue Simulations of System
- Delegation of Project Work

Discussion Items

- Test Plan
- Team Dynamics/Delegation

Status report

Status Items to Report	R	Y	G
Schedule		X	
Budget			X
Quality			X
Team Dynamics		X	
Client Reactions			X
Next milestones:	?		
Issues:	?		
Risks:	?		

Reply

Forward

TM

Agenda

Previous Action Items-

- Order components
- Test Plan for Hardware
- Test Plan for Software
- Wiki page

Future Action Items

- Test Plan for Hardware/Software
- Simulations
- Presentation Draft
- Check with Brooke on Component status

Corona Shut down

- What will our concept review look like?
- Are the lab rooms off limits?

- If so, what does this mean for testing hardware?

Learning time

- Continue weekly learning if time permits

Status report

Status Items to Report	R	Y	G
Schedule		X	
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Testing with hardware, Concept Review		
Issues:	None		
Risks:	None		

Agenda

Previous Action Items-

MU:

- Lead time/prices
- 2 pack IGBT
- 6 pack IGBT connection
- H/L driver (spice model)
- Order form/budget table

MT:

- Space Vector PWM research
 - Python Simulation
 - Examined coordinate transformation processes
- Received sample code from Val

KM:

- DQ simulations
 - Ran separate simulations for D & Q

Gantt Chart

Future Action Items

MU:

- Submit order form
- Run spice simulation for Buck Converter with IR2101 GD and FF200R06KE3 IGBT
- Concept Review Presentation RD

KM:

- Simulink simulation for DQ combined
- Create Wiki Page

MT:

- PWM small scale testing
- Create Wiki Page

Learning time

- Continue weekly learning if time permits

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Testing with hardware, Wiki Page, Concept Review		
Issues:	None		
Risks:	None		

Agenda for the team meeting scheduled on Thursday March 5th, 2020, @ 10:30 AM.

Previous Action Items

- Small scale testing (played with PWM)
- Started specifying a microcontroller
- Got into contact with Val
- IGBT was chosen, but with no model
- Previous components were discontinued

Future Action Items

- Keegan:
 - Simulink: learning models for d and q axis and combining them
- Mason T.:
 - Choose a microcontroller
- Mason U.:
 - finalize IGBT and gate driver choices, start with LTSpice Simulations

Background Information

- Continue our weekly lectures on AC machine theory

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Simulations, Microcontroller, Wiki page, Switching hardware		
Issues:	None		
Risks:	N/A		

Agenda for the team meeting scheduled on Thursday February 27th, 2020, @ 10:30 AM.

Previous Action Items

- Keegan:
 - Set up Simulink environment
 - Simulink model learning and more understanding of DFIM

- Mason T.:
 - Visited lab to see what's there again
 - Started specifying a microcontroller
- Mason U.:
 - Finalized Gate driver
 - Researched and found 2 pack IGBT
 - Played with LTSpice
- Group:
 - Updated Gantt Chart

Items to Discuss

- Contacting Val and Miles

Future Action Items

- Keegan:
 - Simulink: learning models for d,q axis and combining them
- Mason T.:
 - Specify a microcontroller
- Mason U.:
 - finalize IGBT choice, start with LTSpice Simulations

Background Information

- Continue our weekly lectures on AC machine theory

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Simulations and Microcontroller		
Issues:	None		
Risks:	N/A		

Agenda for Team Meeting 26 Feb 2020

Previous action items:

Mason T.: Write a spec list for the microcontroller

Mason U.: Research and choose IGBTs and Gate Drivers

Keegan: Machine model construction and understanding

Review Session 10 from Joe's lectures

(optional) What Keegan learned from meeting with Joe

Change Gantt chart based off what Joe said.

Log book review.

Review Gantt chart to determine next action items.

Agenda for the team meeting scheduled on Thursday February 20th, 2020, @ 10:30 AM.

Previous Action Items

- Delegate specific roles (complete)
- Start simulations of the individual subsystems (pending)
- Evaluate the existing source code and components from previous teams (in progress)

Future Action Items

- Start on simulations

Items to Discuss

- Itemized Budget
- Gantt Chart
- Next Steps

Background Information

- Continue our weekly lectures on AC machine theory

Status report

Status Items to Report	R	Y	G
Schedule			X

Budget			X
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Start Simulation		
Issues:	None		
Risks:	N/A		

Agenda for the team meeting scheduled on Thursday February 13th, 2020, @ 10:30 AM.

Previous Action Items

- Update the Gantt chart (partially completed)
- Delegate specific roles (postponed)
- Continue research (ongoing)
- Evaluate Simulink (completed)

Future Action Items

- Delegate specific roles
- Start simulations of the individual subsystems
- Evaluate the existing source code and components from previous teams

Budget

- Need to set forth an estimated budget

Background Information

- Continue our weekly lectures on AC machine theory

Status report

Status Items to Report	R	Y	G
Schedule			X
Budget		X	
Quality			X
Team Dynamics			X
Client Reactions			X
Next milestones:	Delegation of Roles, Start Simulation		
Issues:	None		

Risks:	N/A
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Agenda

- Presentation of Contract
- SAPA form
- Open Discussion: Questions for instructor/client
- Create goals for the following week
- Assign individual work to help achieve established goals